

**Bossier Parish Community College  
Master Syllabus**

**Course Prefix and Number:** PHAR 104

**Credit Hours:** 5

**Course Title:** Pharmacology for Pharmacy Technicians

**Course Prerequisites:** enrollment in, or completion of, all program qualification courses; departmental permission

**Course Co- requisites:** PHAR 102, PHAR 102L, PHAR 101

**Textbooks:** Ballington; Pharmacology for Technicians, Ballington; 7th edition

**Course Description:**

This course for the pharmacy technician student presents basic pharmacology with emphasis on drug therapy. The course content includes a review of anatomy, physiology and terminology, therapeutic classes of drugs, indications, side effects, contraindications, generic and trade names.

**Learning Outcomes:**

**At the end of the course, the student will be able to:**

- A. Demonstrate basic knowledge of anatomy, physiology, and pharmacology, and medical terminology relevant to the pharmacy technician's role. (2.5)
- B. Describe wellness promotion and disease prevention concepts. (2.4)
- C. Explain the pharmacy technician's role in the medication use process. (2.7)
- D. Describe the investigational drug process, medication being used in off-label indications, and emerging drug therapies. (2.9)
- E. Explain accepted procedures in delivery and documentation of immunizations (3.21)
- F. Identify the generic name, trade name, class and "reason for use" for the top 100 drugs.

**To achieve the learning outcomes, the student will:**

Introduction to Pharmacology and Medication in the Body

1. Define pharmacology, pharmacodynamics, and pharmacokinetics.
2. Describe the origins of drugs.
3. Describe how drugs are named.
4. Compare the three types of drug names.
5. Describe the basic mechanism of drug action within the body.
6. Discuss the ADME of pharmacokinetics.
7. Describe the factors that affect how much of a given drug is needed.
8. Define terms related to beneficial and other drug responses.

9. Describe an allergic response to a drug.
10. Describe various types of drug interaction.
11. Discuss alternative medicine and dietary supplements.
12. Define pharmacopeia and apothecary
13. Describe the roles and responsibilities of the FDA.
14. Describe the new drug approval process.
15. Describe the phases of human drug testing.
16. Describe Medwatch, Medication Guides, FDA recalls, BlackBox warnings, legend drugs, OTC drugs, off-label use, controlled substances, generic drugs, and biosimilar medications.
17. Discuss emerging drug therapies.
18. List the information that is located on the drug package insert.
19. Describe the information located in the FDA orange, purple and green books.
20. Identify electronic and drug resource apps.
21. Define medication use process.
22. Describe the role of the pharmacy technician in the medication use process.

#### Integumentary System and Drug Therapy

1. Describe the basic structure and function of the skin.
2. List the treatments for sun exposure.
3. Differentiate between varying degrees of acne and appropriate treatments.
4. Describe symptoms and treatments for common skin disorders.
5. List treatments for skin infections- bacterial, fungal, yeast, viral, external parasites.
6. Identify the generic name, trade name, class and “reason for use” of drugs commonly prescribed for treatment of disorders of the skin.

#### Musculoskeletal System and Drug Therapy

1. Describe the basic anatomy and physiology of the musculoskeletal system.
2. Identify the three most common types of arthritis and the treatments of each.
3. Describe osteoporosis and its treatment.
4. Define muscle spasms and how they can be treated.
5. Define inflammation and discuss the treatment.
6. Identify the generic name, trade name, class and “reason for use” of drugs commonly prescribed for treatment of disorders of the musculoskeletal system.

#### Nervous System and Drug Therapy

1. Describe the basic anatomy of the nervous system.
2. Describe the basic anatomy and physiology of neurons.
3. Compare functions of the sympathetic and autonomic nervous systems.
4. Describe the types of seizure disorders and the associated treatment.
5. Characterize common nervous system disorders and identify the most common drugs used to treat them.

6. Identify the generic name, trade name, class and “reason for use” for drugs commonly prescribed for treatment of disorders of nervous system.

#### Mental Health and Drug Therapy

1. Identify common mental illnesses.
2. List common drug treatments for depression, ADD, anxiety, schizophrenia, insomnia, and other mental health issues.
3. Highlight special requirements or safety issues with the mood-altering medications.
4. Identify the generic name, trade name, class and “reason for use” for drugs commonly prescribed for treatment of mental health disorders.

#### Sensory System and Drug Therapy

1. Describe the basic anatomy of the eye and ear.
2. Identify common diseases of the eye and ear and identify the most common treatments.
3. Identify the generic name, trade name, class and “reason for use” for drugs commonly prescribed for treatment of disorders of the eye or ear.

#### Cardiovascular System and Drug Therapy

1. Describe the basic anatomy and physiology of the heart.
2. Define blood pressure
3. Identify the major categories of drugs used to treat hypertension and examples of each category.
4. Describe cardiac arrhythmias and identify common drugs used to treat arrhythmias.
5. Explain the pathophysiology of angina and myocardial infarction and the most common treatments.
6. Describe heart failure and list the most common drugs used to treat heart failure.
7. Define lipids, triglycerides, and cholesterol, and their importance in cardiovascular health.
8. Describe statins and other drugs used to treat elevated lipid levels.
9. Describe the basic mechanism of blood clotting.
10. Define the term stroke and identify the major types.
11. Identify the drugs used to treat stroke and other clotting disorders.
12. Identify the generic name, trade name, class and “reason for use” for drugs commonly prescribed for treatment of disorders of the cardiovascular system.

#### Respiratory System and Drug Therapy

1. Describe the basic anatomy and physiology of the respiratory system.
2. Describe conditions of the respiratory system including asthma, chronic obstructive pulmonary disease, cystic fibrosis, and pneumonia; and discuss the treatment.

3. Discuss the treatment of coughs, colds and allergies.
4. Identify smoking cessation programs.
5. Identify the generic name, trade name, class and “reason for use” for drugs commonly prescribed for treatment of disorders of respiratory system.

#### Gastrointestinal System and Drug Therapy

1. Describe basic anatomy and physiology of the gastrointestinal system.
2. Describe the conditions of the gastrointestinal system including GERD, peptic diseases, colitis, Crohns disease, gallstones, and hepatitis; and their treatment.
3. Discuss the treatment of diarrhea, constipation, nausea and vomiting.
4. Identify the generic name, trade name, class and “reason for use” for drugs commonly prescribed for treatment of disorders of the gastrointestinal system.

#### Endocrine System and Drug Therapy

1. Describe the basic anatomy and physiology of the endocrine systems.
2. Discuss common thyroid and adrenal disorders and their treatment.
3. Describe the types, pathophysiology, and treatment of diabetes.
4. Identify the generic name, trade name, class and “reason for use” for drugs commonly prescribed for treatment of disorders of the endocrine systems.

#### Reproductive System and Drug Therapy

1. Describe the basic anatomy and physiology of the reproductive system.
2. Identify the major hormones controlling the reproductive system.
3. Describe disorders and conditions affecting the reproductive system including sexual dysfunction, pregnancy, and childbirth.
4. Identify growth disorders and their pharmaceutical management.
5. Identify the generic name, trade name, class and “reason for use” for drugs commonly prescribed for treatment of disorders and conditions affecting the reproductive system.

#### Renal System and Drug Therapy

1. Describe the basic anatomy and physiology of the renal/urinary system.
2. Define incontinence and describe treatment options.
3. Identify disorders of the prostate and the associated treatments.
4. Describe chronic kidney disease and the associated treatments.
5. Define anemia, explain the relationship to the renal system and describe treatments.
6. Identify the generic name, trade name, class and “reason for use” for drugs commonly prescribed for treatment of disorders of the renal system.

#### Immune System, Infections, and Drug Therapy

1. Describe the basic structure and function of the immune system.

2. Identify the major categories of antibiotics and examples of commonly prescribed antibiotics.
3. Identify sexually transmitted diseases.
4. Describe common treatments for fungal infections.
5. Describe the basic structure and function of viruses.
6. Identify common viral infections.
7. Describe the basic types of viral infections.
8. Describe the body's response to viruses.
9. List common antiviral agents.
10. Describe HIV/ AIDS and the more common pharmacological treatments.
11. Describe the basic principles of vaccination and the role of the pharmacy in the vaccinations process.
12. Identify the generic name, trade name, class and "reason for use" for drugs commonly prescribed for treatment of infections.

#### Pain, Anesthesia, and Drug Therapy

1. Describe the sensation of pain and the types of pain.
2. Identify the goals of pain management.
3. Describe the role of opioids in pain management.
4. Define anesthesia and identify drugs that are used as anesthetics.
5. Describe the pharmacological treatment of migraine headaches.
6. Identify the generic name, trade name, class and "reason for use" for drugs commonly prescribed for pain management.

#### Nutrition, Fluids, Electrolytes, and Drug Therapy

1. Define vitamins and identify the effects of deficiencies and over-use of each.
2. Define electrolytes and identify the effect of deficiencies and excess of each of the major electrolytes.
3. Define acid-base balance and define acidosis and alkalosis.
4. Describe obesity and malnutrition and the pharmacological management of both.

#### Cancer and Drug Therapy

1. Define cancer.
2. Identify the major treatments for cancer.

**Course Requirements:** To earn a grade of "C" or higher the student must earn 70% of the total points for the course and meet all of the following course requirements.

- minimum 70% average on comprehensive midterm and final tests
- minimum 70% average on chapter tests
- overall minimum average of 70% in the course
- minimum of 80% on all top 100 drug quizzes
- successful completion of an oral and written report on a selected pharmaceutical

#### Course Grading Scale

- A- 90% or more of total possible points and a minimum average of 70% on the comprehensive midterm and final tests and a minimum average of 70% on chapter tests
- B- 80% or more of total possible points and a minimum average of 70% on the comprehensive midterm and final tests and a minimum average of 70% on chapter tests
- C- 70% or more of total possible points and a minimum average of 70% on the comprehensive midterm and final tests and a minimum average of 70% on chapter tests
- D- 60% or more of total possible points and a minimum average of 70% on the comprehensive midterm and final tests and a minimum average of 70% on chapter tests
- F- less than 60% of the total possible points or less than 70% average on the comprehensive midterm and final tests or less than 70% average on chapter tests

**Attendance Policy:** The college attendance policy is available at <http://www.bpcc.edu/catalog/current/academicpolicies.html>

### **Nondiscrimination Statement**

Bossier Parish Community College does not discriminate on the basis of race, color, national origin, gender, age, religion, qualified disability, marital status, veteran's status, or sexual orientation in admission to its programs, services, or activities, in access to them, in treatment of individuals, or in any aspect of its operations. Bossier Parish Community College does not discriminate in its hiring or employment practices.

COORDINATOR FOR SECTION 504 AND ADA

Angie Cao, Student and Disability Services Specialist

Disability Services, F254, 6220 East Texas Street, Bossier City, LA 71111

318-678-6511

[acao@bpcc.edu](mailto:acao@bpcc.edu)

Hours: 8:00 a.m.-4:30 p.m. Monday - Friday, excluding holidays and weekends.

Equity/Compliance Coordinator

Teri Bashara, Director of Human Resources

Human Resources Office, A-105

6220 East Texas Street

Bossier City, LA 71111

Phone: 318-678-6056

Hours: 8:00 a.m.-4:30 p.m. Monday - Friday, excluding holidays and weekends.

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